AEHD Plus Drive™

User's Manual

APPLIED ENGINEERING®
A Division of AE Research Corporation
v1.0

Applied Engineering

Telephone Numbers

Technical Support

(214) 241-6084

9AM to 12:30PM & 1:35PM to 5PM (CST)

Monday through Friday

Bulletin Board System - (214) 241-6677

300/1200/2400 baud

8 Bit, No Parity, Full Duplex, V.42bis/MNP-5

24 Hours, 7 Days a Week

Do not return any
product for service without a
Return Material Authorization (RMA) number.
An RMA number can be obtained by calling
Technical Support.

Sales

(214) 241-6060

8:30AM to 6:30PM (CST)

Monday through Friday

Limited Warranty & Disclaimer

Applied Engineering warrants the AEHD Plus Drive against defects in material and workmanship for a period of 1 year from the date of original retail purchase. Applied Engineering also warrants that, under normal use, the magnetic media on which the software is stored is free from defects in materials and workmanship for a period of 30 days from the date of original purchase. Any misuse, abuse, or non-Æ authorized alteration, modification and/or repair to the Applied Engineering product will void the warranty. This warranty will also be void if you use the Æ product for any other purpose than its intended use. If you discover a defect, Applied Engineering will, at its option, repair or replace only the Applied Engineering product, provided you return the product during the warranty period, transportation prepaid, to Applied Engineering.

This warranty applies to the original retail purchaser only. Therefore, please include a copy of the original invoice or a small service charge may be applied. If the product is to be sent to Applied Engineering by mail, the purchaser will insure the package or assume full responsibility for loss or damage during shipping. Prior to returning the product for warranty consideration, call Applied Engineering Technical Support for a Return Material Authorization (RMA) number and shipping instructions.

Even though Applied Engineering has tested the software and reviewed the documentation, Applied Engineering makes no warranty or representation, either express or implied, with respect to the manual or the software; their quality, performance, merchantability, or fitness for a particular purpose. As a result, the software and manual are sold "as is," and you, the purchaser, are assuming the entire risk as to their quality and performance.

In no event will Applied Engineering be liable for loss or damages of any kind caused either directly or indirectly by the use or possession of its products, even if advised of the possibility of such damages. The Applied Engineering Warranty is for the Applied Engineering Product itself. In particular, Applied Engineering shall have no liability for any other equipment used in conjunction with Applied Engineering products nor for programs or data stored in or used with Applied Engineering products, including the costs of recovering such equipment, programs, or data.

The warranty and remedies set forth above are exclusive and in lieu of all others, oral or written, express or implied. No Applied Engineering dealer, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

Applied Engineering cannot guarantee that you will receive notice of revisions to the software, documentation, or products described in this manual. Be sure to check with your dealer or Applied Engineering for information on possible updates. However, Applied Engineering reserves the right to make any improvements to Applied Engineering products without any responsibility toward upgrading previously released products.

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Applied Engineering
Sales: (214) 241-6060 • 8:30AM–6:30PM (CST) Monday–Friday
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Federal Communications Commission
Radio Frequency Interference Statement

The equipment described in this document generates and uses radio frequency energy. If it is not installed and used properly, that is, in strict accordance with these instructions, it may cause interference to radio or television reception.

FCC I.D. Number: EYWAE-3.5

This equipment has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of the FCC Rules. These rules are designed to provide reasonable protection against radio and television interference in residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ❑ Reposition the receiver's antenna. Also make sure the antenna wires are making good electrical contact.
- ❑ Use a roof-mounted antenna rather than a "rabbit-ear" antenna or antenna mounted in the attic.
- ❑ Make sure that all electrical connections on the computer are secure and any shielded I/O cables that are required for compliancy are properly fastened.
- ❑ Move the computer away from the receiver.
- ❑ Plug the computer and receiver into separate electrical circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

Warning: This equipment has been certified to comply with the limits for Class B computing device, pursuant to Subpart J of Part 15 of FCC Rules. Only peripherals (computer input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this computer. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

Finally, any unauthorized changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

INTRODUCTION

About the AEHD Plus Drive

The Applied Engineering AEHD Plus Drive is a high-density 3.5" floppy disk drive for Macintosh computers that gives you SuperDrive compatibility for the Macintosh Plus, SE and II without the SWIM chip upgrade required by Apple. It also works as a standard SuperDrive on all Mac's equipped with high-density drives.

The Plus Drive allows you to store and retrieve up to 1.44 Megabytes (1400K) of information on the Macintosh using double sided, high-density floppy disks (DS/HD). You can also use standard 800K and 400K disks with the Plus Drive just as you would with a standard 800K drive. The drive is fully compatible with Apple's and Applied Engineering's 800K disk drive for the Apple and Macintosh computers.

Disk	Capacity
DS/DD	400K
DS/DD	800K
DS/HD	1.44Mb

The drive lights keep track of the drive's activity; **red** when the drive is **writing** to a floppy, **green** when it is **reading** from a floppy. The drive's DB-19 type connector plugs directly into the 3.5" drive connector. It also has the capability of daisy-chaining to Apple's HD 20 hard drive.

AEHD Plus Drive

Attention!

Return Merchandise Sheet

(Remove from Manual and Save)

In order to obtain the maximum benefits from your investment, please read your user manual first to fully understand your product's capabilities. If you feel you still need technical assistance or suspect you have a defective product, please contact the dealer from whom you purchased the card. If you are experiencing difficulties with one particular program, contact the program's author or publisher.

In the event that the dealer or the software publisher's support personnel cannot answer your question, call Applied Engineering Technical Support. Please provide Technical Support with the following information:

- ◊ The Applied Engineering product related to your question and its revision number
- ◊ The original and current memory configuration of the card (if applicable)
- ◊ The model and revision of your computer
- ◊ What peripherals are being used and what cards are in each slot
- ◊ The name, version, and revision level of the software with which you are experiencing problems
- ◊ The results of any test programs, diagnostics, or troubleshooting done by you, your dealer, or your software publisher's support department

If an AE technician determins that the product needs to be returned, you will receive a Return Material Authorization (RMA) number. Once the RMA# has been issued, please complete the form on the back of this page and send it along with the defective product and a copy of your original invoice to:

RMA# _____
Applied Engineering
Technical Support
3210 Belt Line Road, Suite 154
Dallas, TX 75234-5100

The returned product may be subject to a service charge if:

1) it is sent to technical support without an invoice,
2) our test results show that the product is not defective,
3) the product is not in its original AE memory configuration.

Applied Engineering

Technical Support
Voice Lines-
Mac: (214) 241-6084
Apple II: 1-900-884-0123
$1.50 per minute. Average length of call is 6-7 minutes.)
9 AM to 12:30 PM & 1:35 PM to 5 PM(CST) Monday through Friday
Bulletin Board System - (214) 241-6677
300/1200/2400 baud 8 Bit, No Parity, Full Duplex, MNP-5
24 Hours, 7 Days a Week

Return Form

Return Address:

_____

_____

_____

Daytime Phone:

_____

RMA# _____
APPLIED ENGINEERING
TECHNICAL SUPPORT
3210 BELT LINE RD, STE 154
DALLAS TX 75234-5100

cut out and tape or glue to package

Computer Model

- ❑ Macintosh_____
- ❑ Apple II_____ IIGS ROM #_____
- ❑ Other_____

Peripherals:

- ❑ Monitor_____
- ❑ Printer_____
- ❑ Modem_____
- ❑ Cards & Slot Positions

_____

_____

Symptoms:

_____

_____

_____

_____

_____

_____

Description of Software (system, application, version, enhancements, etc.):

_____

_____

_____

_____

_____

_____

Steps to Duplicate Problem (IIGS users include slot settings):

_____

_____

_____

_____

_____

_____

For Your Records

Applied Engineering
Product Registration Card

Applied Engineering congratulates you on your purchase of one of our enhancement products. With proper installation and care, your Æ enhancement product will provide you with years of trouble-free operation.

So that we may handle your product for any service needs or upgrade offers, please:

1) Complete this side of your Registration Card.
2) Attach your invoice or bill of sale to the top portion.
3) Keep the top portion for your records.
4) Return the bottom portion to Applied Engineering. (Requires postcard stamp.)

AE Product _____

Serial Number (if applicable)_____ Date of Purchase_____

Dealer's Name and Address _____

Applied Engineering
P.O. Box 5100
Carrollton, TX 75011

Sales - (214) 241-6060
Tech Support - Voice - Mac (214) 241-6084 / Apple II 1-900-884-0123 ($1.50 per minute, average length of call is 6-7 minutes)
BBS (214) 241-6677

Detach Here

Mail Me Now!

Applied Engineering
Product Registration Card

To our valued customer-
Please complete and mail as soon as possible.

Your Name_____

Address _____

City_____ State_____ Zip_____

Telephone: Home ( )____-_____ Business ( )____-_____

AE Product Name _____

Serial Number (if applicable) _____ Date of Purchase _____

Purchased From _____

Address _____

Computer Model _____ Other Computers _____

Important: Proof of purchase is required when requesting service under warranty. See the warranty procedure for additional information.

Applied Engineering
Limited Warranty

Your new Applied Engineering enhancement product is warranted to the original retail purchaser only. The warranty on your product is detailed in your User's Manual Warranty and Disclaimer page.

Warranty Procedure

Your Product Registration Card should be filled out and mailed to Applied Engineering as soon as possible after the original purchase date. Keep the owner's portion together with your invoice or Bill of Sale for Warranty service (also applies to upgrade offers).

Should you experience a problem requiring technical assistance, please contact our Technical Service Department. See the included Return Merchandise Sheet for more information about the returns procedure.

In the event that warranty service is required, send your product together with your invoice or Bill of Sale (legible photocopy acceptable) along with your completed return form.

Important: To avoid a handling charge, your invoice or Bill of Sale must accompany any product returned for warranty service. Out-of-warranty repair and no-problem found returns will be subject to a handling charge and/or a service charge.

Ship your equipment in its original carton or equivalent, fully insured and prepaid. Please include (on the return form) a complete description of the equipment used and the problems experienced. If you do not have a return form, provide a complete description of your equipment (computer model, installed peripherals, etc.) and the problems (including software used when problem encountered) in a letter to be shipped with the returned product.

Detach Here

Attach Stamp Here

APPLIED ENGINEERING
P.O. BOX 5100
CARROLLTON TX 75011-5100

USING THE PLUS DRIVE

Software and Hardware Installation

Requirements for the Macintosh

In order to take advantage of the AEHD's capabilities on the Macintosh, you'll need the following:

- **Disk Drive Port**

  The Disk Drive Port is the 19-Pin connector on the back panel of the computer.

Mac II, IIx & IIfx—The Macintosh II, IIx or IIfx do not include an external floppy drive connector. You'll need the external drive adapter cable available from AE. The cable plugs into the second internal drive connector and mounts to the computer's back panel giving you an external drive connector.

- **AE's Plus Drive INIT or FDHD-Compatible Circuitry**

  The INIT, along with firmware in the drive itself, eliminates the need for the SWIM chip circuitry that Apple requires to run high-density disks. If you have a Mac 512, Plus, SE or II without a high-density drive, you'll need to install AE's INIT.

  The high-density circuitry is included in the Macintosh Classic, LC, IIsi, IIx, IIcx, IIci, IIfx, SE/30, and later models of the Macintosh SE. If you're not certain about the compatibility of your computer, check with your Apple dealer.

- **Macintosh Finder 6.0 or Later**

  We recommend using Finder version 6.0 or later. Earlier versions are not guaranteed to work with the high-density drives. See your Apple dealer for the latest system version.

- **Apple File Exchange or other MS-DOS to Macintosh transfer programs**

  Apple File Exchange is included with System 6.0 and later. Follow the Apple File Exchange instructions for using the drives to write to and read from MS-DOS disks. DOS Mounter (Dayna Communications) and Access PC (Insignia Solutions) also read and write MS-DOS disks when used with high-density drives.

- **High-density Disks**

  Double sided, high-density (DS/HD) disks are available from most computer stores and mail order dealers. You can tell if the disk is DS/HD if it has a "bonus hole" at the upper left corner of the disk directly across from the write protect tab. The drive detects this bonus hole and will handle DS/HD media as high-density only. Standard DS/DD disks do not have this bonus hole and the drive will handle this media as standard density only.

  ❖ *Note:* Do Not add the extra bonus hole to the disk yourself. While disks modified in the manner may seem to work for a short period of time, they are made of different material and were not designed to hold 1.4Mb of data.

Connecting

Macintosh

❖ *Note:* Mac II, IIx and IIfx owners should follow the instructions included with the optional external drive cable to complete its installation before proceeding.

With power to the computer turned OFF, connect the DB-19 cable from the disk drive to the DISK PORT on the back panel of the computer. Tighten the thumb screws to secure the connection.

❖ ***Important:*** When connecting or disconnecting the drive, turn the computer off. If power is left on, the drive and the computer will possibly be damaged.

Installing the INIT (512, Plus, SE and II)

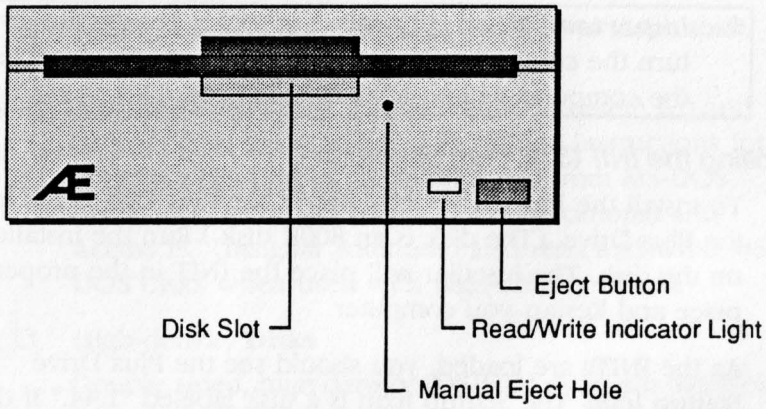
To install the Plus Drive INIT, insert the Plus Drive disk into the Plus Drive. (The disk is an 800K disk.) Run the installer on the disk. The installer will place the INIT in the proper place and Restart you computer.

As the INITs are loaded, you should see the Plus Drive Startup Icon. The Startup Icon is a disk labeled "1.44." If the Startup Icon has an "X" through it, the driver could not be loaded properly. Make sure the drive is connected properly. If you have any INIT managers, make sure the Plus Drive INIT is enabled.

Ejecting the Disks

You can eject the disks while the computer is on by any of the methods following:

- ❑ Drag the disk's icon to the trash can (this does not erase the disk).
- ❑ Click on the disk's icon to select it and then choose Eject from the File menu or type ⌘-E
- ❑ When the power is off, you can eject the disk by inserting a straightened paper clip into the small manual ejection hole to the left of the eject button and then pushing the internal lever with the paper clip. This will not harm the disk or the drive but, when possible, eject the disk while the computer is on by dragging the disk icon on the Finder to the trash icon or by using the eject button.


Eject Button
Disk Slot
Read/Write Indicator Light
Manual Eject Hole

AEHD Plus Drive